

Republika ng Pilipinas
(Republic of the Philippines)
KAGAWARAN NG EDUKASYON, KULTURA AT ISPORTS
(DEPARTMENT OF EDUCATION, CULTURE AND SPORTS)
UL Complex, Pasig, Metro Manila

November 20, 1991

DECS O R D E R
No. 130, s. 1991

UTILIZATION OF THE TECHNICAL AND VOCATIONAL
EDUCATION (TVE) MANPOWER PLAN

To: Bureau Directors
Regional Directors
Presidents, State Colleges and Universities
Vocational School Superintendents/Administrators
Heads of Private Schools, Colleges and Universities

1. The Bureau of Technical and Vocational Education, recognizing the mismatch of the middle level skills manpower supply with the requirements of the economy and the proliferation of post-secondary non-degree courses developed a Technical and Vocational Education Manpower Plan. This activity is one of the thrusts of the Technical and Vocational Education Project (TVEP) and was formulated in cooperation with the Institute for Labor Studies, a labor policy research arm of the Department of Labor and Employment.

2. The Technical and Vocational Education (TVE) Manpower Plan Executive Summary, copy of which is provided as an inclosure to this DECS Order, covers a six-year (1990-1995) period and has the following objectives:

- a. Provide an analysis of the current middle level skill manpower situation in the country;
- b. Define the middle level skill manpower requirements of the economy by industry level and occupation;
- c. Identify and analyze the current technical and vocational education outputs, namely the technicians, craftsmen and operatives;
- d. Match middle level skill manpower requirements with technical and vocational education outputs;
- e. Forecast trends of middle level skill manpower requirements and supply on a five-year period; and
- f. Recommend policies and schemes to realign training offerings with skills in high demand and to promote the recognition of technical and vocational graduates.

3. Utilization of this plan shall pave the way for the strengthening of existing relevant technical and vocational education programs, development of new course offerings needed especially in priority economic areas and building additional capabilities to respond to the expected manpower requirements in the next six years.

4. Consultation meetings shall be conducted to discuss the utilization of the plan and develop implementation guidelines for the technical and vocational institutions during the quarterly conferences of the fourteen (14) Chiefs of the DECS Regional Technical and Vocational Education Divisions and the annual conferences of the Technical Advisory Committees and the administrators of the technical and vocational education institutions.

5. An annual updating and validation of the planned targets and projections particularly with regard to manpower requirements, training targets, enrollees and graduates, to take into account global and local market developments is imperative.

6. Relevance of existing courses in relation to the real demands of industry, additional budget requirements and budget assistance to operationalize programs and projects among others must be considered in the validation of the Plan.

7. Implementation of selective institutional programs shall be realigned with the BTVE program thrusts to ensure realization of the plan's objectives and in a way ease up widespread unemployment.

8. Prioritization and/or realignment of non-degree post-secondary course offerings, formulation of admission policies and determination of quantitative as well as qualitative developments in the technical and vocational education sub-sector shall be based on said plan.

9. Immediate dissemination of this Order is desired.

(SGD.) ISIDRO D. CARINO
Secretary

Incl.:
As stated

Reference:
None

Allotment: 1-3-d--(M.O. 1-87)

To be indicated in the Perpetual Index
under the following subjects:

✓ BUREAUS & OFFICES
✓ TECHNICAL EDUCATION
✓ VOCATIONAL EDUCATION

Executive Summary
TECHNICAL AND VOCATIONAL EDUCATION MANPOWER PLAN
(1990-1995)

A. RATIONALE

Technical and vocational education as an area of the country's overall manpower and human resource development program has the crucial role of training individuals and providing the middle level skill manpower required by our economy. The emerging problem of the loss or lack of certain identified skills in our labor market is a situation peripheral to the problem of mismatching of jobs and educational outputs. Causes for this condition has considerably been traced to our industrial processes changes, rapid increase in demand and the employees conventional recruitment policies. This condition, therefore, compels the undertaking of the assessment of the performance of technical and vocational education vi-a-vis the demands of the economy. Having chosen productivity as the centerpiece program of the technical and vocational education for the generation of employment and alleviation of poverty through maximized productivity, the technical and vocational education subsector needs to fulfill its mission through two interrelated programs, namely: (a) matching manpower supply with demand; and (b) more effective instructional delivery.

B. ASSESSMENT OF TECHNICAL AND VOCATIONAL EDUCATION PERFORMANCE

The three-year technician course turned out its first batch of graduates in SY 1988-1989 with a total of 844 graduates and increased by 9.36 percent in SY 1989-1990. The mechanical technology and related courses got the biggest share of 42.58 percent; 28.93 percent for other engineering related technology courses; 23.51 percent for electrical technology; and 4.98 percent for civil technology.

The two-year craftsman course produced a total of 35,737 graduates in SY 1988-89. Accounting 44.18 percent of these fall under other related technology courses; 20.52 percent for other engineering related technology courses; 14.44 percent for mechanical technology and related courses; 12.05 percent for electrical technology courses; 2.54 percent for civil technology; 2.18 percent for food trades; 2.10 percent for technical drafting; 1.78 percent for garment trades; 0.07 percent for handicrafts; and 0.01 percent for ceramics technology.

The graduates of the one-year operative courses numbered about 46,355 also in SY 1988-1989. Mechanical technology and related courses got the biggest share of 52.85 percent; followed by other related technology courses having a percent share of 23.01 percent; electrical technology is 14.53 percent; 9.14 percent for other engineering related technology courses; and 0.44 percent for technical drafting.

C. THRUSTS OF TECHNICAL AND VOCATIONAL EDUCATION

TVE aims to contribute towards the attainment of the national goals of raising productivity, generating employment, alleviating poverty and promoting equity and social justice.

Goals

1. Re-orient training of technicians and tradespersons towards manpower requirements of industry.
2. Expand entrepreneurship training to support small and medium scale export-oriented industries.

Objectives

1. Development of middle and high level manpower on priority areas.
2. To acquire occupational skills for gainful employment.
3. To inculcate work attitudes/values for efficiency and effectiveness on the job.
4. To develop critical thinking and self-learning skills/establish a coordination scheme for a stronger linkage between the educational system and the industry sector.

Strategies

1. Fabrication method of training for productivity.
2. Role stratification:
 - 1st Level: The TEI as the "Most Likely to Succeed": The Leader Schools in Regional Development Programs.
 - 2nd Level: Technical Schools as Provincial Leader Schools.
 - 3rd Level: Secondary Vocational Schools as Feeder Schools.

Programs/Projects

1. Matching Manpower Supply with Demand
 - a) Manpower requirements approach to planning
 - b) Industry-driven courses
 - c) Non-traditional products and services
 - d) Education Management Information System (EMIS)
 - e) Industry-Institution Linkages: the Technical Advisory Committee's
 - f) The School-Based Production Centers: Significant Contributors to the Rural Industrialization Strategy

2. More Effective Instructional Delivery Systems

- a) Training cum-production of tools, machineries, spare parts and accessories
- b) Competency-Based Vocational Education
- c) Dual Training System
- d) Development/Testing of Prototype Instructional Materials
- e) Teachers' Industry Attachment Program (TIAP)
- f) Entrepreneurship Training Centers (ETCs): The Employment Generators
- g) Technician Competency Skills Test (TCST)
- h) Institutional Accreditation

D. PROJECTIONS ON TECHNICAL AND VOCATIONAL EDUCATION COURSES

The three-year technician course will continue to gain popularity as exhibited by its high enrolment growth rate of 17.90 percent and a graduate growth rate of 9.36 percent both in SY 1988-1989 to SY 1989-1990. Among the three-year technician courses, graduates for the mechanical technology and related courses got an average share of 42.58 percent; 28.93 percent in other engineering related technology courses. The electrical and civil technology areas contributed average shares of 23.65 percent and 4.32 percent, respectively.

From 1987 to 1989, graduates of craftsmen and operatives courses increased posting an average growth rate of 3.59 percent and is expected to generate constant increases in the number of graduates from 1991 to 1995. Among the specific craftsmen courses, general craftsmen courses and other specific craftsmen courses are likely to have a large turn-out of graduates ranging from 81,074 in SY 1990-1991 to 102,379 in SY 1994-1995 for the former and 103,599 in SY 1990-1991 to 129,078 in SY 1994-1995 for the latter. Graduates in the operative courses is also projected to generate an increasing trend particularly in the industry specific plant/machine operators courses, from 22,036 in SY 1990-1991 to 26,016 in SY 1994-1995. For general plant machine operators the increase is from 6,325 in SY 1990-1991 to 7,966 in SY 1994-1995.

E. MANPOWER DEMAND PROJECTIONS

1. Projected Employment

Technicians

Projected employment of technicians will increase from 281,469 in 1991 to 333,420 by the year 1995. The net addition of employment will be 51,951 by the end of 1995 with an average growth rate of 4.40 percent during the five-year period. The industry specific workers will represent the highest average share of 38.61 percent of the total technicians; followed by the draft and design workers with an average share of 22.32 percent; electrical with an average share of 15.55 percent; mechanical is 8.27 percent; civil is 3.10 percent and other engineering related technology courses with an average share of 4.13 percent.

Craftsmen and Operatives

Employment of craftsmen and operatives is expected to have an increasing trend from 1991 to 1995. In 1991, employment of craftsmen and operatives is projected to reach 3,834,579 and grow to 4,559,852 in 1995. Considerably, industry specific craftsmen posted the biggest average share of employment which is 34.89 percent; followed by general plant/machine operators 29.80 percent; 20.63 percent for general craftsmen; and 14.68 percent for industry specific plant/machine operators.

2. Projected Manpower Requirements

Technicians

Projected manpower requirements of technicians for the five-year period will be fluctuating from 16,143 in 1991 to 16,205 in 1995. Industry specific technicians will comprise about 50.86 percent of the total technicians required; followed by draft and design technicians with an average of 23.87 percent; electrical technicians with an average share of 12.27 percent; civil with 7.91 percent; and other engineering related technicians with 2.74 percent; mechanical and other related technicians with 2.35 percent of the total manpower requirements.

Craftsmen and Operatives

The employment demand of craftsmen and operatives will increase from 147,148 in 1991 to 192,274 in 1995. However, a fluctuating growth will continue to exist within the five-year period, except in the last four years. Among its major categories, industry specific craftsmen and general plants/machine operators will demand the most with an average shares of 35.34 percent and 30.19 percent, respectively. This is followed by general craftsmen with an average share of 20.91 percent and industry plant/machine operators with 13.58 percent of the total craftsmen and operatives manpower requirements.

In a disaggregated level, construction workers bore the highest manpower demand with an average share of 32.65 percent; stationary engine, material handling and transport equipment operators with an average share of 50.19 percent; other specific plant/machine operators with 10.28 percent; machine fitters with 10.31 percent; electrical fitters with 5.19 percent; plumbers with 3.58 percent; miners with 3.11 percent; other industry specific craftsmen with 2.69 percent; blacksmiths with 1.84 percent; and stone cutters 0.17 percent. Projected manpower requirements of technicians, craftsmen and operatives per region from 1991 to 1995 are shown in Tables 1 to 13.

F. TRAINING TARGETS

Technicians

Total training targets for technicians for 1991 will be set at a level of 15,040 decreasing to 14,628 in 1995. Throughout the five-year period, a positive

training target for technicians will be exhibited except for mechanical and related technicians. By type of workers, industry specific technicians will be the major contributor, having an average share of 56.78 percent of the total training targets; followed by draft and design technicians with an average share of 26.18 percent; electrical technicians with 11.17 percent; civil technicians with 8.26 percent; other engineering related technicians with 0.22 percent; and mechanical and other related technicians with negative 1.61 percent. The economy needs a total of 1,521,948 technicians within the next five years. The average annual training target for technicians is estimated at 13,735.

Craftsmen and Operatives

Total training targets for craftsmen and operatives is at negative levels of 75,458 in 1991 and 75,225 in 1995. However, construction workers posted the highest positive growth of 47,221 training targets in 1991 and 57,481 in 1995. This is followed by the general plant machine operators with 40,534 targets in 1991 and 49,341 in 1995. Training targets for miners is pegged at 4,805 in 1991 and 5,841 in 1995; blacksmiths with 860 in 1991 and 852 in 1995; and stone cutters with 247 in 1991 and 299 in 1995.

G. ACTION PLAN

Achieving the six-year technical and vocational education and training goal of providing the quantitative and qualitative manpower requirements in terms of technicians, craftsmen and operatives would require the following actions:

- 1) Operationalization and/or strengthening of new and existing programs that are designed to minimize impediments to the efficient and effective operation of the existing technical and vocational education delivery system; and
- 2) Strengthening of programs that would build additional capabilities of relevant technical and vocational education institutions in responding to the expected manpower requirements in the next six years.

Table 1
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 Region I
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	472	284	122	229	217
Electrical	34	28	36	42	6
Mechanical	1	-4	-3	-1	5
Civil	61	5	-5	18	-2
Other Engineering	28	44	-3	6	19
Draft and Design	156	38	-23	34	38
Industry Specific	192	121	131	129	151
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	399	331	850	886	9559
Miners, Quarrying and Related Workers	159	175	178	187	2008
Stone Cutters	9	9	11	9	111
Other Industry Specific Plant Workers	231	647	661	690	7440
GENERAL CRAFTSMEN	1074	1,172	1199	1250	13478
Blacksmiths, Tool Makers and Machine Tool Operators	95	103	106	110	1187
Machine Fitters, Assemblers and Precision Instrument Workers	529	578	591	616	6645
Electrical Fitters and Related Electrical and Electronics Workers	266	230	297	310	3339
Plumbers, Welders and Metal Preparers and Erectors	184	201	205	214	2307
INDUSTRY SPECIFIC CRAFTSMEN	1816	1,951	2026	2114	22768
Construction Workers	1678	1,830	1872	1953	21054
Other Industry Specific Craftsmen	138	151	154	161	1734
GENERAL PLANT/MACHINE OPERATORS	1551	1,693	1730	1806	19466
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	1551	1,693	1730	1806	19466

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995

Table 2
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 Region II
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	200	104	43	201	161
Electrical	28	12	26	8	5
Mechanical	0	2	-3	1	6
Civil	21	3	9	1	25
Other Engineering	4	2	0	-5	1
Draft and Design	61	40	23	774	62
Industry Specific	86	45	-12	122	62
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	131	270	277	287	301
Miners, Quarrying and Related Workers	53	56	58	61	63
Stone Cutters	3	3	4	2	4
Other Industry Specific Plant Workers	75	211	215	224	234
GENERAL CRAFTSMEN	350	381	396	408	423
Blacksmiths, Tool Makers and Machine Tool Operators	31	34	34	36	37
Machine Fitters, Assemblers and Precision Instrument Workers	172	188	192	201	209
Electrical Fitters and Related Electrical and Electronics Workers	87	94	97	101	105
Plumbers, Welders and Metal Preparers and Erectors	60	65	67	70	72
INDUSTRY SPECIFIC CRAFTSMEN	591	645	658	668	718
Construction Workers	546	596	606	638	663
Other Industry Specific Craftsmen	45	49	50	52	55
GENERAL PLANT/MACHINE OPERATORS	505	550	563	587	613
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	505	550	563	587	613

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995

Table 3
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 Region III
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	995	986	927	810	740
Electrical	108	55	99	97	55
Mechanical	12	19	-8	7	6
Civil	89	62	10	34	53
Other Engineering	16	42	-5	30	30
Draft and Design	179	217	52	199	150
Industry Specific	431	471	369	443	444
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	700	1456	1488	1551	1622
Miners, Quarrying and Related Workers	280	306	312	326	341
Stone Cutters	16	17	19	16	19
Other Industry Specific Plant Workers	404	1133	1157	1209	1262
GENERAL CRAFTSMEN	1679	2052	2087	3189	2265
Blacksmiths, Tool Makers and Machine Tool Operators	165	131	135	193	230
Machine Fitters, Assemblers and Precision Instrument Workers	927	1012	1034	1078	1127
Electrical Fitters and Related Electrical and Electronics Workers	465	508	520	542	587
Plumbers, Welders and Metal Preparers and Erectors	321	351	358	375	391
INDUSTRY SPECIFIC CRAFTSMEN	3189	3458	3546	3702	3864
Construction Workers	2933	3204	3277	3420	3570
Other Industry Specific Craftsmen	242	254	269	282	294
GENERAL PLANT/MACHINE OPERATORS	2716	2964	3023	3152	3301
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment operators	2716	2964	3023	3152	3301

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to

Table 4
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 Region IV
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	1351	1744	962	1401	1683
Electrical	120	242	214	151	167
Mechanical	47	102	-18	53	81
Civil	77	60	4	64	66
Other Engineering	49	47	3	18	24
Draft and Design	406	449	136	375	353
Industry Specific	650	824	621	739	912
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	982	2042	2089	2176	2,274
Miners, Quarrying and Related Workers	393	429	436	457	478
Stone Cutters	22	24	27	28	26
Other Industry Specific Plant Workers	567	1589	1624	1,696	1,770
GENERAL CRAFTSMEN	2637	2880	2340	3071	3207
Blacksmiths, Tool Makers and Machine Tool Operators	232	255	258	270	283
Machine Fitters, Assemblers and Precision Instrument Workers	1301	1419	1450	1514	1581
Electrical Fitters and Related Electrical and Electronics Workers	653	714	728	762	794
Plumbers, Welders and Metal Preparers and Erectors	451	492	504	525	549
INDUSTRY SPECIFIC CRAFTSMEN	4480	4866	4974	5193	5421
Construction Workers	4121	4496	4595	4796	5009
Other Industry Specific Craftsmen	339	370	379	395	412
GENERAL PLANT/MACHINE OPERATORS	3810	3257	4248	4436	4630
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	3810	3257	4248	4436	4630

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995

Table 5
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 Region V
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	130	294	11	51	146
Electrical	20	44	18	35	53
Mechanical	2	0	-1	6	-1
Civil	27	24	-6	9	25
Other Engineering	7	1	0	8	12
Draft and Design	26	67	2	-5	19
Industry Specific	48	158	0	-2	60
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	166	346	354	370	384
Miners, Quarrying and Related Workers	577	73	74	78	80
Stone Cutters	3	4	5	4	4
Other Industry Specific Plant Workers	96	269	275	288	300
GENERAL CRAFTSMEN	448	487	499	523	542
Blacksmiths, Tool Makers and Machine Tool Operators	39	43	44	46	48
Machine Fitters, Assemblers and Precision Instrument Workers	221	240	246	257	268
Electrical Fitters and Related Electrical and Electronics Workers	111	121	124	130	133
Plumbers, Welders and Metal Preparers and Erectors	77	83	85	90	93
INDUSTRY SPECIFIC CRAFTSMEN	756	625	843	881	919
Construction Workers	699	762	779	814	849
Other Industry Specific Craftsmen	57	63	64	67	70
GENERAL PLANT/MACHINE OPERATORS	646	704	721	752	785
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	646	704	721	752	785

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995

Table 6
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 Region VI
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	183	196	-14	58	517
Electrical	19	26	34	39	409
Mechanical	3	-5	-10	-9	-102
Civil	43	28	2	26	105
Other Engineering	3	16	-18	1	-95
Draft and Design	65	52	-10	35	-153
Industry Specific	50	79	-12	-40	153
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	450	934	956	995	1,041
Miners, Quarrying and Related Workers	180	196	201	209	219
Stone Cutters	10	11	13	10	12
Other Industry Specific Plant Workers	260	727	744	776	810
GENERAL CRAFTSMEN	1206	1320	1346	1436	1469
Blacksmiths, Tool Makers and Machine Tool Operators	106	116	119	124	129
Machine Fitters, Assemblers and Precision Instrument Workers	595	651	663	694	724
Electrical Fitters and Related Electrical and Electronics Workers	299	327	334	348	364
Plumbers, Welders and Metal Preparers and Erectors	206	226	230	240	243
INDUSTRY SPECIFIC CRAFTSMEN	2043	2228	2278	2378	2431
Construction Workers	1837	2058	2104	2188	2292
Other Industry Specific Craftsmen	156	169	174	181	188
GENERAL PLANT/MACHINE OPERATORS	1744	1904	1945	2032	2121
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	1744	1904	1945	2032	2121

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995

Table 7
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 Region VII
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	1111	1231	999	1077	1323
Electrical	187	104	110	122	134
Mechanical	49	75	20	59	63
Civil	96	59	26	69	33
Other Engineering	52	64	-4	37	41
Draft and Design	360	370	285	282	372
Industry Specific	417	559	462	508	670
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	773	1613	1649	1715	1795
Miners, Quarrying and Related Workers	309	339	346	331	377
Stone Cutters	17	19	21	16	21
Other Industry Specific Plant Workers	447	1255	1282	1339	1397
GENERAL CRAFTSMEN	2064	2272	3324	2424	2531
Blacksmiths, Tool Makers and Machine Tool Operators	184	200	205	213	223
Machine Fitters, Assemblers and Precision Instrument Workers	1027	1120	1146	1195	1248
Electrical Fitters and Related Electrical and Electronics Workers	515	563	576	601	627
Plumbers, Welders and Metal Preparers and Erectors	357	389	397	415	435
INDUSTRY SPECIFIC CRAFTSMEN	3521	3843	3937	4100	4281
Construction Workers	3253	3551	3628	3788	3955
Other Industry Specific Craftsmen	268	292	299	312	326
GENERAL PLANT/MACHINE OPERATORS	3007	3283	3354	3503	3656
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	3007	3283	3354	3503	3656

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995

Table 6
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 Region VIII
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	28	65	85	22	-9
Electrical	5	5	35	2	6
Mechanical	0	0	0	0	0
Civil	4	2	-2	10	-4
Other Engineering	3	3	-1	1	0
Draft and Design	6	12	-12	27	-14
Industry Specific	0	45	45	-18	3
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	61	126	130	133	142
Miners, Quarrying and Related Workers	24	27	27	28	30
Stone Cutters	2	1	3	0	2
Other Industry Specific Plant Workers	35	98	100	105	110
GENERAL CRAFTSMEN	163	180	181	190	198
Blacksmiths, Tool Makers and Machine Tool Operators	15	15	16	17	18
Machine Fitters, Assemblers and Precision Instrument Workers	60	88	90	94	97
Electrical Fitters and Related Electrical and Electronics Workers	40	46	44	47	49
Plumbers, Welders and Metal Preparers and Erectors	28	31	31	32	34
INDUSTRY SPECIFIC CRAFTSMEN	276	301	306	221	335
Construction Workers	255	278	284	297	310
Other Industry Specific Craftsmen	21	23	24	24	25
GENERAL PLANT/MACHINE OPERATORS	236	257	263	275	286
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	236	257	263	275	286

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995

Table 9
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 Region IX
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	170	154	126	58	265
Electrical	21	7	3	2	2
Mechanical	8	8	-2	-1	0
Civil	38	36	23	10	51
Other Engineering	-4	10	6	1	-5
Draft and Design	39	38	56	15	66
Industry Specific	48	55	40	31	152
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	138	275	282	294	307
Miners, Quarrying and Related Workers	53	58	59	62	64
Stone Cutters	3	3	4	3	4
Other Industry Specific Plant Workers	77	214	219	229	239
GENERAL CRAFTSMEN	955	888	898	414	433
Blacksmiths, Tool Makers and Machine Tool Operators	31	34	35	37	38
Machine Fitters, Assemblers and Precision Instrument Workers	175	191	196	204	214
Electrical Fitters and Related Electrical and Electronics Workers	88	96	99	102	107
Plumbers, Welders and Metal Preparers and Erectors	61	67	68	71	74
INDUSTRY SPECIFIC CRAFTSMEN	601	657	671	700	732
Construction Workers	355	607	620	647	676
Other Industry Specific Craftsmen	46	50	51	53	56
GENERAL PLANT/MACHINE OPERATORS	514	561	573	599	624
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	514	561	573	599	624

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995

Table 10
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 Region X
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	354	317	87	295	234
Electrical	32	15	18	36	43
Mechanical	3	5	-7	-3	12
Civil	23	40	17	9	32
Other Engineering	20	22	-10	-1	11
Draft and Design	122	142	-6	128	49
Industry Specific	155	93	75	126	57
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	335	697	714	748	776
Miners, Quarrying and Related Workers	135	146	150	156	163
Stone Cutters	7	8	9	8	9
Other Industry Specific Plant Workers	193	543	555	579	604
GENERAL CRAFTSMEN	903	981	1006	1049	1096
Blacksmiths, Tool Makers and Machine Tool Operators	80	86	89	92	97
Machine Fitters, Assemblers and Precision Instrument Workers	445	484	496	517	540
Electrical Fitters and Related Electrical and Electronics Workers	224	243	249	260	272
Plumbers, Welders and Metal Preparers and Erectors	154	188	172	180	187
INDUSTRY SPECIFIC CRAFTSMEN	1524	1663	1699	1774	1851
Construction Workers	1408	1536	1570	1638	1711
Other Industry Specific Craftsmen	115	127	129	136	140
GENERAL PLANT/MACHINE OPERATORS	1302	1420	1451	1515	1582
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	1302	1420	1451	1515	1582

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995

Table II
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 Region XI
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	363	379	190	366	318
Electrical	32	19	31	19	24
Mechanical	8	-2	1	-3	5
Civil	72	277	29	49	45
Other Engineering	17	8	-9	-1	14
Draft and Design	150	89	63	121	100
Industry Specific	87	239	75	131	128
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	509	1052	1073	1123	1173
Miners, Quarrying and Related Workers	203	221	226	226	247
Stone Cutters	12	12	14	12	13
Other Industry Specific Plant Workers	294	819	838	875	913
GENERAL CRAFTSMEN	1362	1465	1518	1565	1655
Blacksmiths, Tool Makers and Machine Tool Operators	126	131	133	140	146
Machine Fitters, Assemblers and Precision Instrument Workers	672	732	749	781	818
Electrical Fitters and Related Electrical and Electronics Workers	337	368	376	393	410
Plumbers, Welders and Metal Preparers and Erectors	233	254	260	271	288
INDUSTRY SPECIFIC CRAFTSMEN	2302	2512	2567	2680	2793
Construction Workers	2128	2321	2372	2476	2555
Other Industry Specific Craftsmen	176	191	195	204	213
GENERAL PLANT/MACHINE OPERATORS	1967	2144	2194	2288	2391
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	1967	2144	2194	2288	2391

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995

Table 12
 Projected Manpower Requirements of Technician, Craftmen and Operatives
 Region XII
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	-17	42	-55	41	-91
Electrical	8	15	34	11	-3
Mechanical	-3	4	-5	-8	-8
Civil	8	34	-7	27	-4
Other Engineering	0	-1	-15	3	-2
Draft and Design	10	43	-44	23	-3
Industry Specific	-35	-54	-3	-15	-71
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	223	467	479	498	520
Miners, Quarrying and Related Workers	88	87	101	105	109
Stone Cutters	4	6	6	5	6
Other Industry Specific Plant Workers	130	384	372	388	405
GENERAL CRAFTSMEN	605	658	672	704	735
Blacksmiths, Tool Makers and Machine Tool Operators	53	58	59	62	65
Machine Fitters, Assemblers and Precision Instrument Workers	288	325	331	347	362
Electrical Fitters and Related Electrical and Electronics Workers	150	163	166	175	182
Plumbers, Welders and Metal Preparers and Erectors	104	112	116	120	125
INDUSTRY SPECIFIC CRAFTSMEN	1021	1115	1036	1159	1241
Construction Workers	943	1030	1052	1058	1147
Other Industry Specific Craftsmen	78	85	86	91	94
GENERAL PLANT/MACHINE OPERATORS	872	952	973	1015	1061
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	872	952	973	1015	1061

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995

Table 13
 Projected Manpower Requirements of Technician, Craftsmen and Operatives
 National Capital Region
 1991-1995

MANPOWER CATEGORY	1991	1992	1993	1994	1995
TECHNICIANS	10960	11356	7625	10224	10812
Electrical	1098	1259	1192	1339	831
Mechanical	329	446	36	213	282
Civil	999	1039	512	803	782
Other Engineering	403	417	97	270	336
Draft and Design	2876	2943	1420	2140	2569
Industry Specific	5255	5750	4366	5480	5940
INDUSTRY SPECIFIC PLANT/MACHINE OPERATORS	7290	15151	15511	16143	16676
Miners, Quarrying and Related Workers	2917	3161	3253	3395	3544
Stone Cutters	162	177	204	164	195
Other Industry Specific Plant Workers	4211	11793	12054	12584	13137
GENERAL CRAFTSMEN	19581	21366	21840	22797	23601
Blacksmiths, Tool Makers and Machine Tool Operators	1725	1863	1924	2007	2996
Machine Fitters, Assemblers and Precision Instrument Workers	9655	10533	10767	11240	11735
Electrical Fitters and Related Electrical and Electronics Workers	4651	5294	5412	5649	5898
Plumbers, Welders and Metal Preparers and Erectors	3350	3656	3737	3901	4072
INDUSTRY SPECIFIC CRAFTSMEN	33108	36125	36922	38547	40241
Construction Workers	30568	33377	34113	35615	37175
Other Industry Specific Craftsmen	2520	2748	2809	2932	3066
GENERAL PLANT/MACHINE OPERATORS	28280	30858	31540	32927	34372
Station, Engine, Material Handling, Transport, Broadcasting Station and Related Equipment Operators	28280	30858	31540	32927	34372

Source: Technical and Vocational Education (TVE) Manpower Plan, 1990 to 1995.